# High Performance Teleimaging Infrastructure for Collaborative Health Care

*H.K. Huang*
*Childrens Hospital Los Angeles/University of Southern California*
hkhuang@aol.com

The objective of this research is to design, implement, and evaluate the impact of a high performance asynchronous transfer mode (ATM) OC-3 testbed wide-area network for telemedical imaging applications (Figure 1). The testbed links two medical centers, one ambulatory care center, and one research laboratory in the San Francisco Bay Area. The teleimaging applications are for transmission, management, and remote consultation of brain and breast images and associated medical data.

This presentation describes the architecture of the ATM network, the characteristics of the four connected nodes, and network connectivity and performance. In the brain image application, results of using this network for neuroimaging consultation between Fellows and senior neuroradiologists are given. In breast imaging, results of telemanagement of mammography examinations are presented.

Lessons learned from this experience include the cost of installation and maintenance of the ATM network, the difficulty of initiating the local connectivity, and the selection of proper protocols for evaluation of specific teleimaging applications. The presentation concludes with the difficulties encountered when this private ATM network was replaced by the Internet 2.
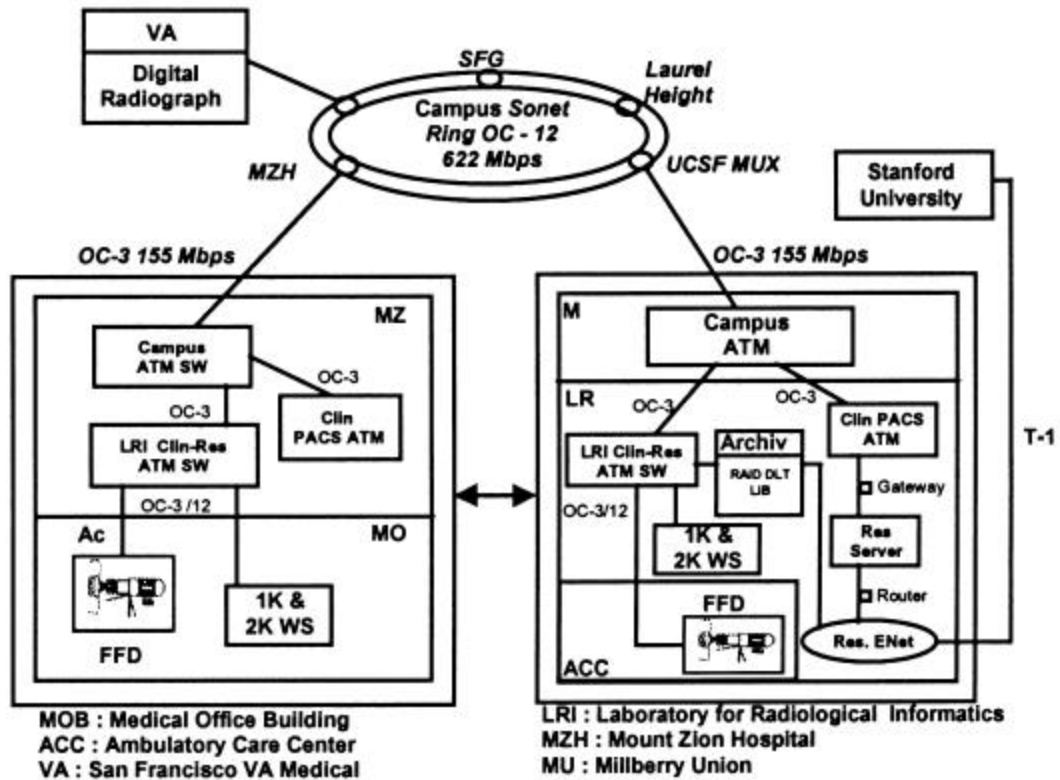
Figure 1. Asynchronous Transfer Mode OC-3 (155 Mbps) Testbed Network